

USSN 09/215,095

REMARKS

The Examiner is thanked for the telephone interview of July 29, 2002 with the undersigned and Mr. Todd Becker. In that interview the Examiner stated that the Klessner rejection would be overcome by using "single seed particle" prior to use of comprising language in those claims. The §112 rejections were discussed and support for the language in the claims was pointed out to the Examiner. The declaration of Mr. Becker that was submitted in the previous response was discussed, particularly with reference to the Markussen reference, as it was not clear that the Examiner had seen the declaration prior to issuing the instant office action.

Claims 66-69, 72-76, and 78-98 are pending. Claims 66-69, 72, 74, 78, 79, 82-86, 91, 92, 93, 95-97 are rejected under 35 USC §102(b) as anticipated by Kiesser et al. (5,739,091). Claims 75, 76, 80, 81, 87, 88, 92-98 are rejected under 35 USC §103(a) as unpatentable over Kiesser et al. Claims 66-69, 72-76, 78-88 are rejected under 35 USC §103(a) as obvious over Markussen (EP 304332). Claims 89, 90, 92, and 96 are rejected under 35 USC §112, first paragraph.

Claim 66 has been amended to claim "a layered granule having a single core, the layers comprising a protein matrix layer around the seed particle wherein said matrix includes a protein mixed together with a combination of a sugar or sugar alcohol and a non-fibrous polysaccharide structuring agent; and an outer barrier layer or coating". Claim 83 has been amended to claim the layered granule as above having selected enzymes. Support for the use of "non-fibrous" in claims 66 and 83 can be found in the background section on page 2, lines 14-19 in connection with Applicant's disclosure and discussion of US Pat. No. 4,740,469. Support also may be found on page 8, lines 1 and 13-15, describing Applicants' structuring agents.

35 USC §112 REJECTIONS

Claims 89, 90, 92, and 96 are rejected under 35 USC §112, first paragraph. The Examiner stated that the specification did not describe the ratios claimed in claims 89, 90; and further did not describe the barrier layer materials in claims 92, 96. As discussed in the telephone interview referenced above, the 0.1-90% by weight ratio of sugar or sugar alcohol to structuring agent is disclosed on page 7, line 27-28 of the specification. Inorganic salts, organic acids, organic salts, and the matrix without protein as barrier materials are disclosed on page 9, lines 24-26.

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35 USC §102(b) REJECTION

Claims 66-69, 72, 74, 78, 79, 82-86, 91, 92, 93, 95-97 are rejected under 35 USC §102(b) as anticipated by Kiesser et al. (5,739,091). In view of the Examiner's statements during the interview referenced above, it is believed that this rejection is now obviated as independent claims 66 and 83 have been amended to place "single seed particle" language in the preamble of the claim prior to the use of "comprising" language to describe the layers of the granule. Additionally, page 6, lines 30-31 of the specification state that the ratio of seed particles to granules is 1:1.

35 USC §103(a) REJECTION

Claims 75, 76, 80, 81, 87, 88, 92-98 are rejected under 35 USC §103(a) as unpatentable over Kiesser et al. It is believed that this rejection is obviated by the amendments discussed above clarifying that applicants are claiming a layered granule.

Claims 66-69, 72-76, 78-88 are rejected under 35 USC §103(a) as obvious over Markussen (EP 304332). It is the Examiner's position that Markussen teaches, in addition to a core which may include enzyme, a coating having cellulose or artificial binders. Per the Examiner: "The reference does not explicitly teach the presence of sugars in the granule", but that "such ingredients would be *prima facie* obvious when the enzyme granulates are to be used as nutrient additives, because the reference teaches that if the granules are to be used as nutrient additives, the enzyme (which can be either inside the core or in the surrounding coating) can be mixed with starch, sugars or proteins".

Applicants respectfully disagree with the Examiner. Markussen does not teach the presence of a matrix of protein, sugars and a structuring agent since the sugar mentioned in Markussen is an optional ingredient used only for nutrient purposes. Applicants claims 66 and 83 require the presence of sugars or sugar alcohols to form the matrix. The Examiner is referred to Applicants' specification, page 7, lines 1-24, and page 8, lines 1-7, which states that the "matrix" is an admixture of one or more proteins..., a sugar or sugar alcohol and a structuring agent" (page 7, lines 1-2); "Surprisingly, it has been found that by the addition of a structuring agent to the sugar matrix formula, protein can be applied uniformly to individual seed particles at rapid rates without agglomeration or attrition." (page 7, lines 18-20); and further describing the matrix as "serving as a diffusion barrier to water and small molecules by virtue of forming a polymer network or "cage" throughout the matrix structure. This greatly improves the stability of the granule." (page 8, lines 5-7). Nothing in Markussen teaches or suggests

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the use of sugar or sugar alcohol in combination with a structuring agent and protein for the purpose of improving stability of granules.

Additionally, Applicants' independent claims 66 and 83 claim "non-fibrous" structuring agents as opposed to the fibres taught by Markussen on page 2, lines 12-13 and 43-54, describing the length and width of the fibre materials used. Such fibrous materials would not suggest forming a matrix of a non-fibrous structuring agent with a sugar or sugar alcohol and protein to result in a matrix that is water soluble or dispersible.

Applicants believe that the application is now in condition for allowance, and reconsideration and allowance of the claims are respectfully requested. The Examiner is invited to telephone the undersigned if such a call would hasten allowance of the claims.

Respectfully submitted,

Date:

8/21/02



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VERSION SHOWING CHANGES MADE

66. (Three times amended) A layered granule having a single seed particle, the layers comprising,

[a] an individual seed particle;]

a) a protein matrix layered over the seed particle wherein said matrix includes a protein mixed together with a combination of a sugar or sugar alcohol and a non-fibrous polysaccharide structuring agent; and

b) an outer barrier layer or coating.

83. (Three times amended) A layered enzyme granule having a single seed particle, the layers comprising,

[a] an individual seed particle;]

a) an enzyme matrix layered over the seed particle wherein said matrix includes an enzyme mixed together with a combination of a sugar and a polysaccharide structuring agent, said enzyme selected from the group consisting of proteases, amylases, lipases and cellulases and said polysaccharide structuring agent selected from the group consisting of starch, modified starch, non-fibrous cellulose, modified non-fibrous cellulose, carrageenan, gum Arabic, xanthan gum, locust bean gum, and guar gum; and

b) an outer barrier or coating.

I hereby certify that this correspondence is being sent by facsimile transmission in accordance with § 1.6(d),
addressed to Art Unit 1631, After Final Facsimile No. (703) 872-9307, the Commissioner for Patents,
Washington, D.C. 20231 on the date shown below.

Date: August 21, 2002By: Carol A. See
Carol A. SeePATENT
Docket No. GC507-2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of)
N. T. Becker et al.) Group Art Unit: 1631
Serial No.: 09/215,095) Examiner: Michael Borin
Filed: December 18, 1998)
For: MATRIX GRANULE)

PETITION FOR EXTENSION OF TIME

Box AF
Commissioner for Patents
Washington, D.C. 20231

Sir:

The following extension of time is requested to respond to the Final Office Action
dated April 23, 2002:

one month to August 23, 2002; the extension fee is \$110.00.
 two months to _____; the extension fee is \$400.00.
 three months to _____; the extension fee is \$920.00.
 four months to _____; the extension fee is \$1,440.00.
 five months to _____; the extension fee is \$1,960.00.

The extended time for response does not exceed the statutory period.

- The shortened statutory period has been reset by an Advisory Action
 dated _____.
- Charge \$110.00 to Deposit Account No. 07-1048.

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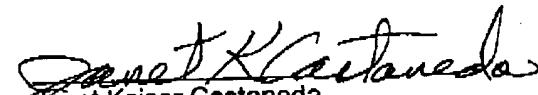
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The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 07-1048 (Docket No. GC507-2). A duplicate of this paper is enclosed.

Respectfully submitted,

Date: August 21, 2002


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